



Are Flash droughts the new normal?

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Flash droughts have become more frequent, more severe, and flashier across Germany. Their effects also last longer

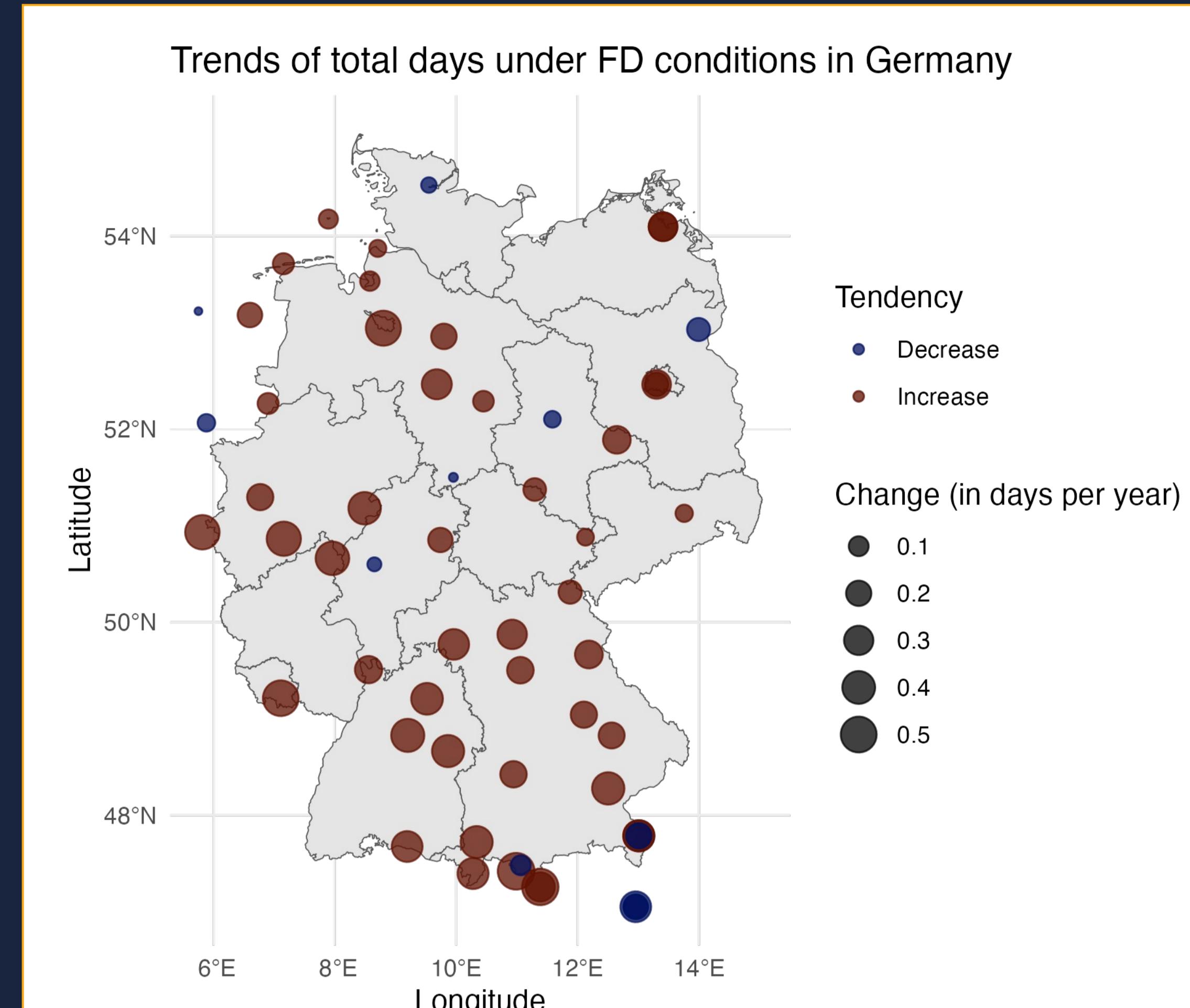


Fig 1. Trends in occurrence of FD (1980-2022)

1. Introduction

- Flash droughts are characterized by a rapid depletion of soil moisture, from normal to very dry conditions
- Flash droughts are a seasonal phenomenon that leads to impacts on agriculture, water resources, ecosystems, etc.

2. Methods

- We use 60 DWD stations with low missing day occurrence (< 0.1%) to obtain all climatic variables necessary to run the WOFOST crop model¹
- From WOFOST we assess **soil moisture**, necessary to obtain flash droughts²
- Additionally, with WOFOST we can estimate the impacts of flash droughts on agriculture³

3. Results

- Flash droughts are usual phenomena in Germany, observed since before the 1980's
- There is, however, an intense increased in occurrence, persistence, and intensity of FD, particularly in the 2000's
- There is a direct relation between the duration and intensity of FD and crop losses
- Furthermore, despite not known by the general public, FD impacts are present in the drought impact perception dataset for Germany⁴

4. Future research

- Develop **meaningful definitions** for flash drought that are informed by **land use, local practices and users perceptions** on drought impacts.

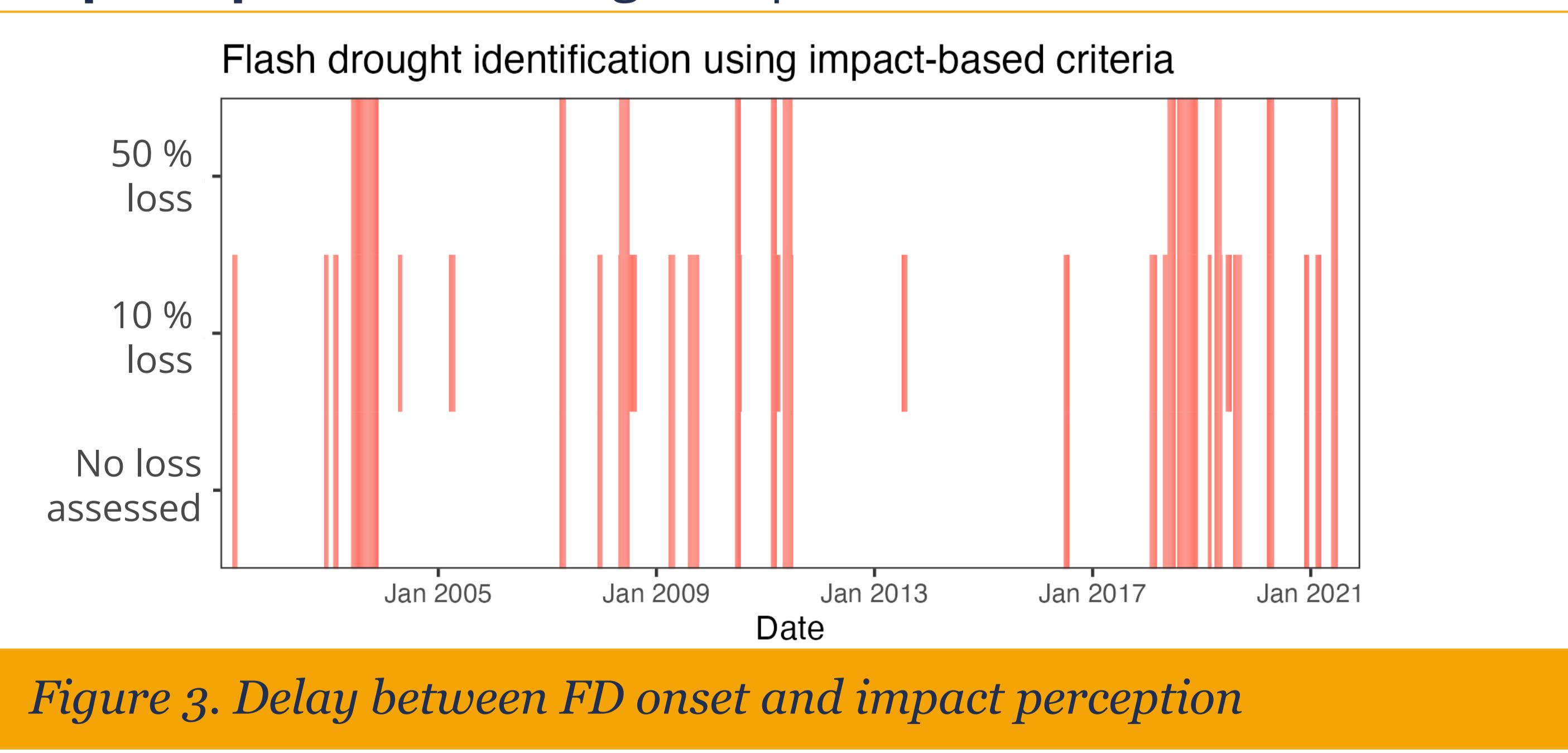


Figure 3. Delay between FD onset and impact perception

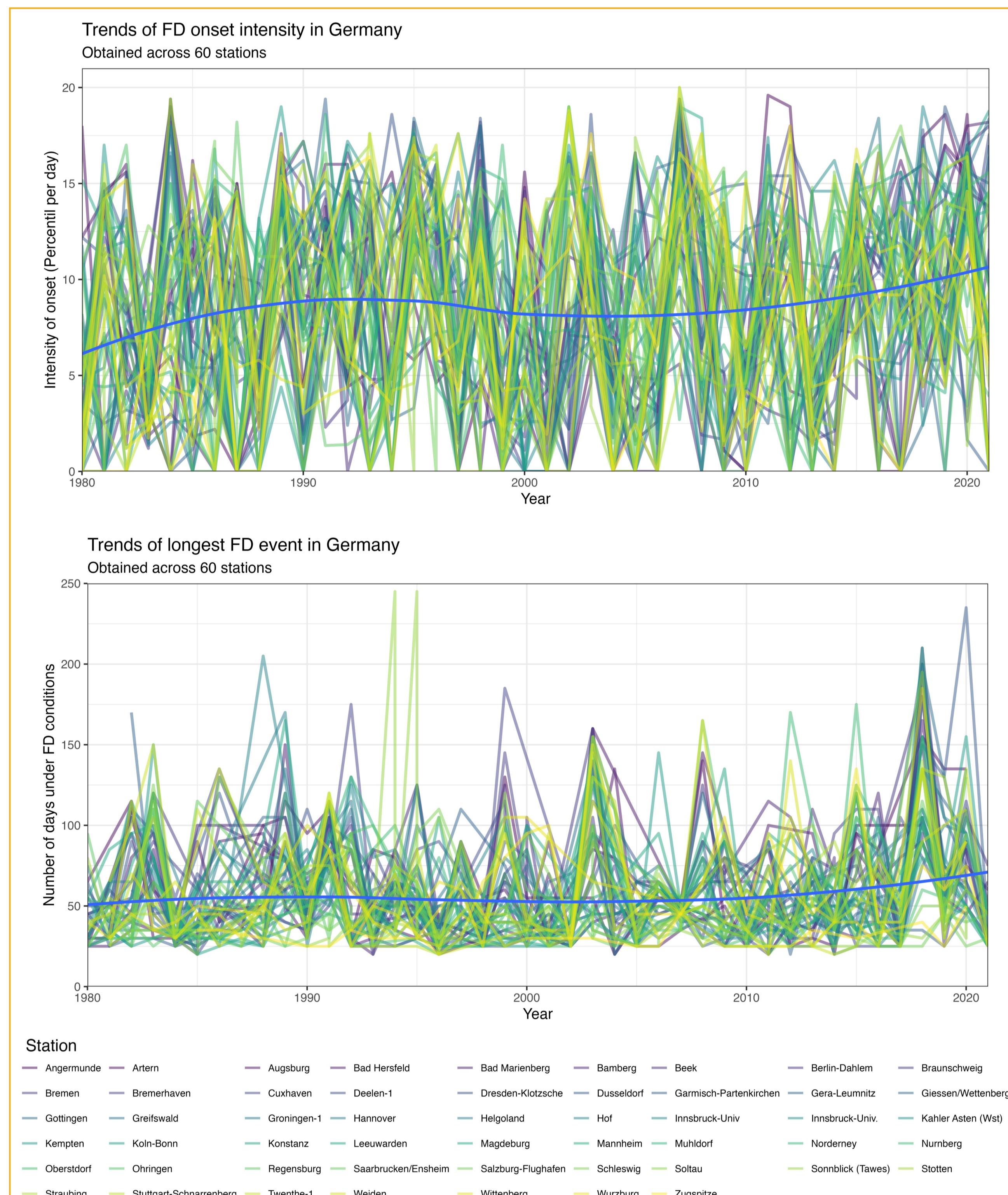


Figure 2. (a) Trends in FD intensity and (b) trends in FD persistence. Values aggregated at NUTS-2 level

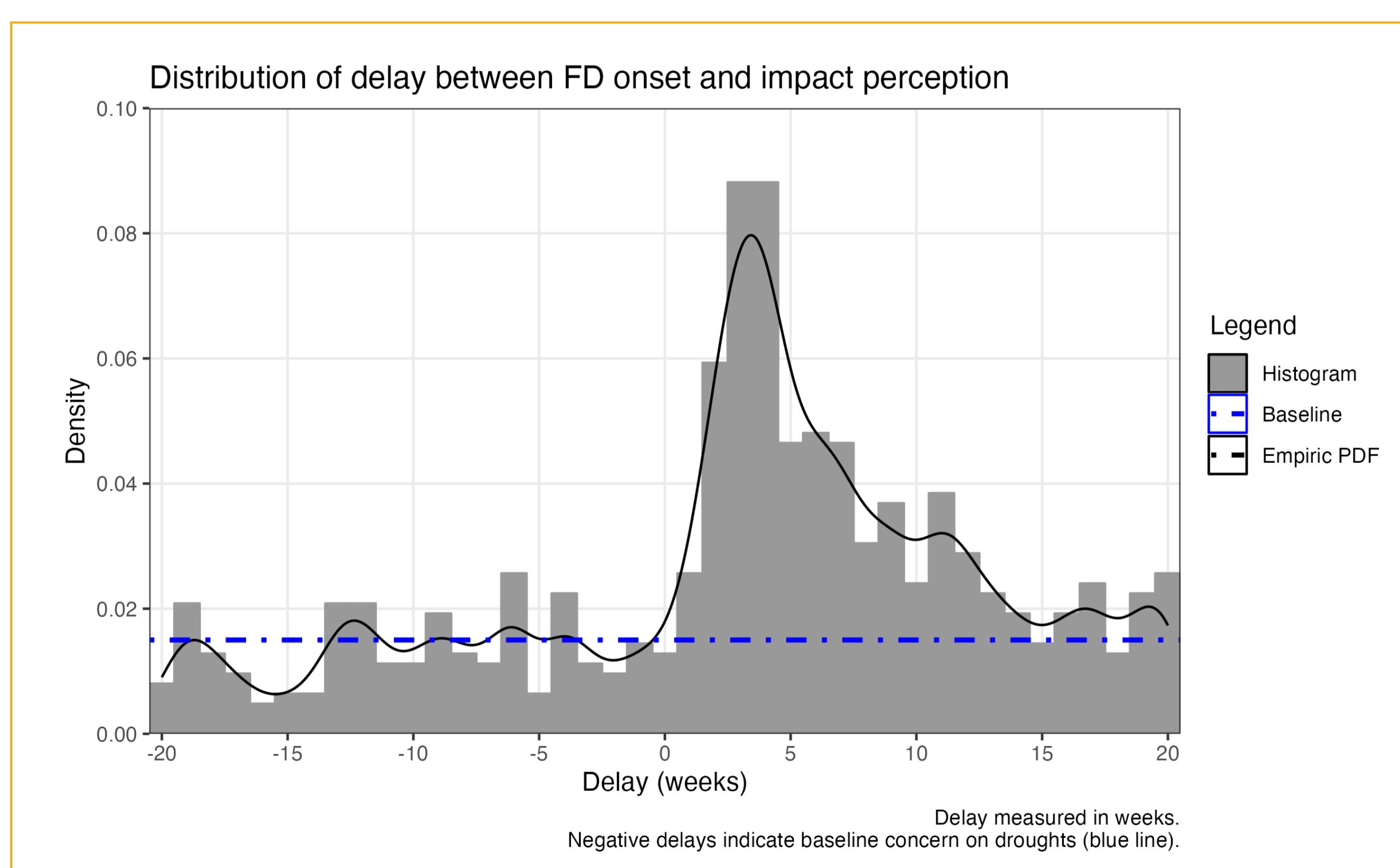


Figure 3. Delay between FD onset and impact perception

References

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